MOB II HIGH PERFORMANCE LUBRICANTS

OIL ANALYSIS REPORT

WEAR	ABNORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	MARGINAL

Machine Id
LIEBHERR LTM1650 AT2423
Component
Diesel Engine
Fluid
DIESEL ENGINE OIL 10W40 (--- LTR)

RECOMMENDATION

No corrective action is recommended at this time. Resample at the next service interval to monitor.

WEAR

The copper level is abnormal. In the absence of other significant wear metals, suspect copper due to sources other than wear (i.e. cooling core). All other metal levels are typical for a new component breaking in.

CONTAMINATION

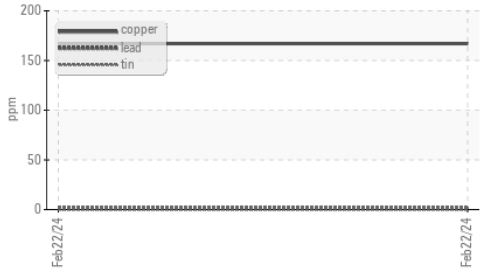
Fuel content negligible. There is no indication of any contamination in the oil.

FLUID CONDITION

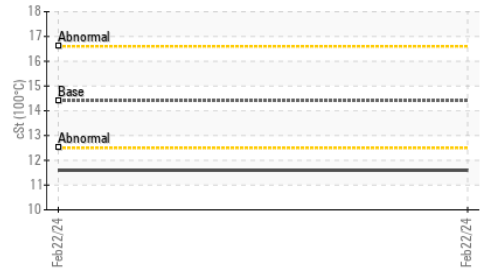
The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		HPL0004540	---	---
Sample Date		Client Info		22 Feb 2024	---	---
Machine Age	hrs	Client Info		575	---	---
Oil Age	hrs	Client Info		0	---	---
Filter Age	hrs	Client Info		0	---	---
Oil Changed		Client Info		N/A	---	---
Filter Changed		Client Info		N/A	---	---
Sample Status				ABNORMAL	---	---
Iron	ppm	ASTM D5185m	>100	25	---	---
Chromium	ppm	ASTM D5185m	>5	<1	---	---
Nickel	ppm	ASTM D5185m	>5	<1	---	---
Titanium	ppm	ASTM D5185m		<1	---	---
Silver	ppm	ASTM D5185m	>3	<1	---	---
Aluminum	ppm	ASTM D5185m	>15	4	---	---
Lead	ppm	ASTM D5185m	>30	<1	---	---
Copper	ppm	ASTM D5185m	>125	▲ 167	---	---
Tin	ppm	ASTM D5185m	>5	2	---	---
Vanadium	ppm	ASTM D5185m		0	---	---
White Metal	scalar	*Visual	NONE	NONE	---	---
Yellow Metal	scalar	*Visual	NONE	NONE	---	---
Silicon	ppm	ASTM D5185m	>60	10	---	---
Potassium	ppm	ASTM D5185m	>20	2	---	---
Fuel	%	ASTM D3524	>5	1.6	---	---
Water		WC Method	>0.2	NEG	---	---
Glycol		WC Method		NEG	---	---
Soot %	%	*ASTM D7844	>3	0.1	---	---
Nitration	Abs/cm	*ASTM D7624	>20	11.6	---	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	38.9	---	---
Silt	scalar	*Visual	NONE	NONE	---	---
Debris	scalar	*Visual	NONE	NONE	---	---
Sand/Dirt	scalar	*Visual	NONE	NONE	---	---
Appearance	scalar	*Visual	NORML	NORML	---	---
Odor	scalar	*Visual	NORML	NORML	---	---
Emulsified Water	scalar	*Visual	>0.2	NEG	---	---
Sodium	ppm	ASTM D5185m		2	---	---
Boron	ppm	ASTM D5185m	250	90	---	---
Barium	ppm	ASTM D5185m	10	21	---	---
Molybdenum	ppm	ASTM D5185m	100	44	---	---
Manganese	ppm	ASTM D5185m		5	---	---
Magnesium	ppm	ASTM D5185m	450	865	---	---
Calcium	ppm	ASTM D5185m	3000	1258	---	---
Phosphorus	ppm	ASTM D5185m	1150	666	---	---
Zinc	ppm	ASTM D5185m	1350	844	---	---
Sulfur	ppm	ASTM D5185m	4250	2095	---	---
Oxidation	Abs/.1mm	*ASTM D7414	>25	49.7	---	---
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	11.75	---	---
Visc @ 100°C	cSt	ASTM D445	14.4	▲ 11.6	---	---

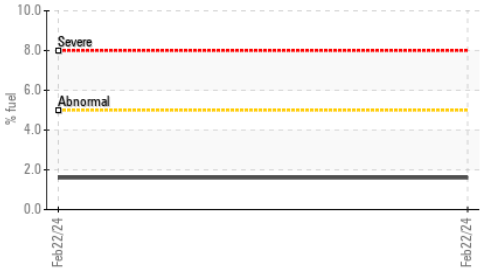
Non-ferrous Metals



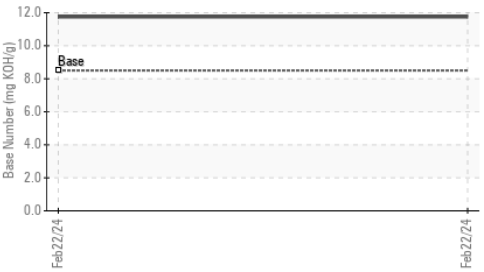
Viscosity @ 100°C



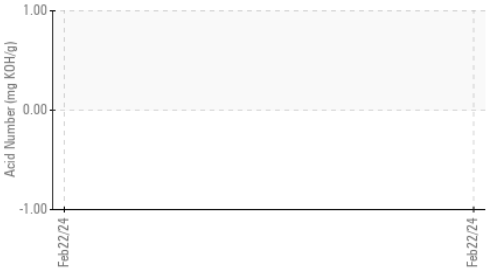
Fuel Dilution



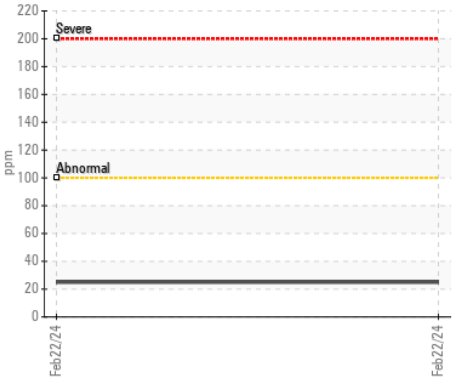
Base Number



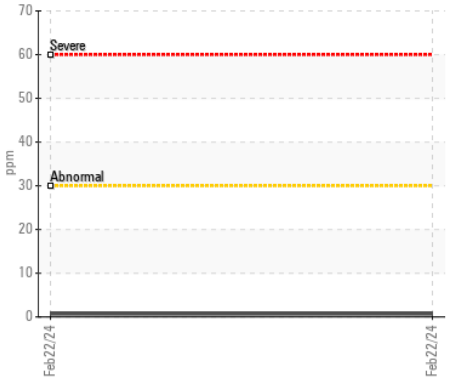
Acid Number



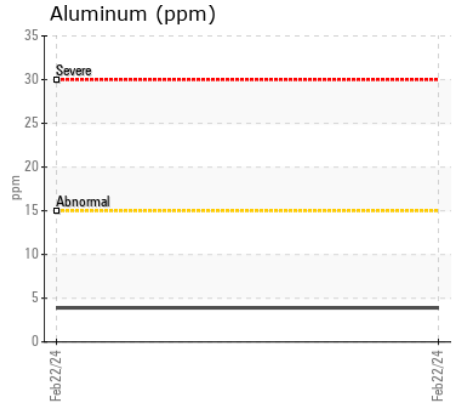
Iron (ppm)



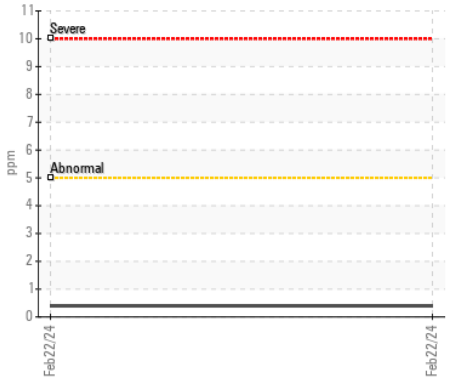
Lead (ppm)



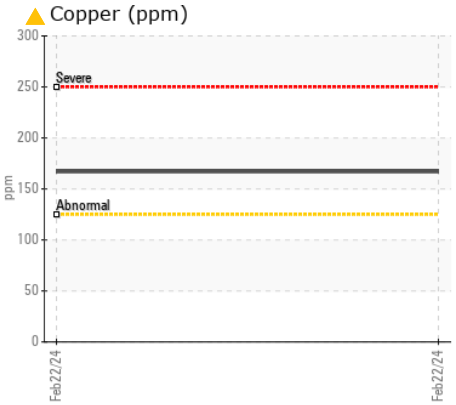
Aluminum (ppm)



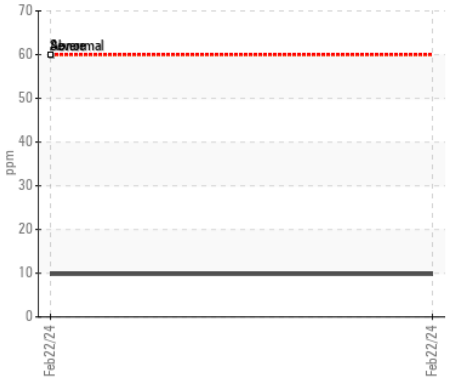
Chromium (ppm)



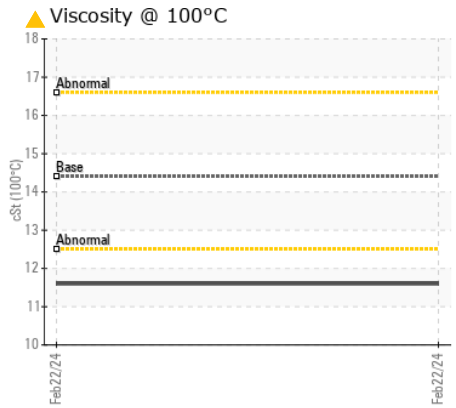
Copper (ppm)



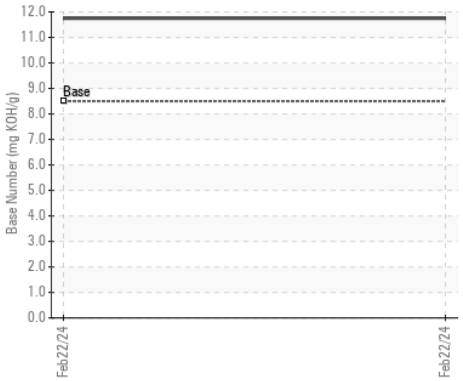
Silicon (ppm)



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : HPL0004540 **Received** : 23 Feb 2024
Lab Number : 06098635 **Tested** : 28 Feb 2024
Unique Number : 10896865 **Diagnosed** : 28 Feb 2024 - Jonathan Hester
Test Package : MOB 2 (Additional Tests: FuelDilution, KV40, PercentFuel)

To discuss this sample report, contact Customer Service at 1-800-237-1369.
** - Denotes test methods that are outside of the ISO 17025 scope of accreditation.*
Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

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